Claims

1. A hydrodynamic brake comprising a stator (1) which has an annular shell (3) with a multiplicity of blades (4), a rotor (2) which has a corresponding annular shell (5) with a multiplicity of blades (6), which annular shells (3, 5) of the rotor (2) and stator (1) are so arranged that they form a toroidal space (7), a medium which is intended to be supplied to the toroidal space (7) in order to effect a braking action, a first pipe circuit (35) which caters for transfer of the medium from an outlet from the toroidal space (7) to a first inlet to the toroidal space (7), and a second pipe circuit (37) which caters for transfer of the medium from a storage space (34) to the toroidal space (7), characterised in that the second pipe circuit (37) caters for transfer of the medium to the toroidal space (7) via a second inlet (44) which is separately arranged relative to the first inlet (42) to the first pipe circuit (35).

2. A hydrodynamic brake according to claim 1, characterised in that the second inlet incorporates at least one input hole (44) situated in a second region where the pressure during a braking process is always substantially lower than the pressure of the medium in the first pipe circuit (35).

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3. A hydrodynamic brake according to claim 2, characterised in that the pressure in the second region corresponds substantially to atmospheric pressure.

4. A hydrodynamic brake according to claim 2 or 3, characterised in that the input hole (44) of the second inlet is situated substantially centrally in the toroidal space (7).

5. A hydrodynamic brake according to claim 4, characterised in that the input hole (44) of the second inlet is situated adjacent to a free end portion of a blade (4).

6. A hydrodynamic brake according to claim 5, characterised in that the input hole (44) of the second inlet is situated in the stator (1).

7. A hydrodynamic brake according to any one of the foregoing claims, characterised in that the second pipe circuit (35) incorporates a pump (26) for transferring the medium to the toroidal space (7).

8. A hydrodynamic brake according to claim 7, characterised in that said pump is a gear pump (26).

9. A hydrodynamic brake according to any one of the foregoing claims, characterised in that the first inlet to the toroidal space (7) incorporates at least one input hole (42) situated in a radially outer region of the stator (1).

10. A hydrodynamic brake according to any one of the foregoing claims, characterised in that the said outlet from the toroidal space (7) incorporates at least one output hole (43) situated in a radially outer region of the stator (1).